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EVALUATION OF AN EXPECTNACY CHALLENGE CURRICULUM IN REDUCING HIGH
RISK ALCOHOL USE AMONG COLLEGE STUDENTS WHEN MODIFIED FOR LARGE
CLASSES

by

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B.A. Binghamton University, 2006

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Science
in the Department of Psychology
in the College of Sciences
at the University of Central Florida
Orlando, Florida

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ABSTRACT

Alcohol consumption has repeatedly been recognized as the primary public health concern impacting students on college campuses. In response to the prevalence of risky alcohol use and lack of effective response among colleges and universities, the National Advisory Council of the National Institute on Alcohol Abuse and Alcoholism created a task force to review the relevant research literature on alcohol interventions to advise college administrators on effective program implementation and evaluation as well as provide recommendations for future research directions. Only three strategies met criteria for Tier 1 designation (empirical support specifically with college students) and two of these strategies are intensive and time-consuming individual methods. The third Tier 1 strategy, challenging alcohol expectancies, was the only method that was validated for administration in a group setting. For widespread utility of expectancy-based prevention strategies, effective interventions must be developed for delivery in typical settings. The focus of the present study was to modify an existing classroom curriculum designed to alter expectancy processes of college students for use in classroom settings of 100+ students as they have become the typical class size in college and university settings. The modified expectancy curriculum was implemented in a single session with students during their actual classes. Measures of alcohol consumption and alcohol related harms were collected anonymously for the 30 days prior and the 30 days following the curriculum. Measures of alcohol expectancies were also collected anonymously immediately prior and immediately following the curriculum. Analyses revealed significant reductions in average drinks per sitting males and key expectancy changes for both males and females. A low number of high-risk drinkers led to further exploratory analyses with the exclusion of a proportion of the lighter drinkers in the sample. These analyses revealed significant decreases in average drinks per sitting and peak drinks per sitting for both males and females. There were no significant changes in alcohol related

harms. This study represents an important extension of expectancy-based interventions for a college population. An intervention that began as a multi-session, time and resource intensive protocol for a small group of participants has been successfully modified for use with groups of 100+ people. The current protocol can be given to this large a group in a single session curriculum that can be delivered in any standard classroom.

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INTRODUCTION

Alcohol consumption has repeatedly been recognized as the primary public health concern impacting students on college campuses. A 2007 report states that 85% of college students had tried alcohol, 40% reported occasions of binge drinking (five or more drinks in the past two weeks) and 48% indicated that they had been “drunk” in the past 30 days (Johnston, O’Malley, Bachman, & Schulenburg, 2007). Alcohol use frequently begins before college, however, there is a significant increase in alcohol use in students’ first year of college as compared to their use in the last three months of their senior year of high school (Fromme, Corbin & Kruse, 2008). In addition, college students engage in more high-risk drinking than their non-college attending peers (Skutske et al., 2004; Johnston et al, 2007). The consequences for college students are grave. Alcohol use contributes to over 1,700 of their deaths, almost 700,000 assaults, and 97,000 cases of sexual assault or date rape among college students each year (Hingson, Heeren, Winter, & Wechsler, 2005). Even with increased awareness and widespread prevention efforts to address the problem on college campuses nationwide, little change in college students high-risk drinking has been documented (Wechsler, Lee, Kuo, Seibring, Nelson, & Lee, 2002).

The lack of reduction in alcohol related harms experienced by college students can be attributed to several obvious problems. For example, campus alcohol programming usually suffers from a lack of careful evaluation for effectiveness. In addition, research results on effective strategies have not been disseminated adequately, making the selection of appropriate strategies difficult. In response to the prevalence of risky alcohol use and lack of effective response among colleges and universities, the National Advisory Council of the National Institute on Alcohol Abuse and Alcoholism created a task force to review the relevant research literature on alcohol interventions. The primary objective of the task force was to advise college administrators on effective program

implementation and evaluation as well as provide recommendations for future research directions. (National Institute on Alcohol Abuse and Alcoholism, 2002) The resulting recommendations were organized into tiers based on the interventions focus on college students and the degree of empirical support. Tier 1 identified strategies that had empirical support specifically with college students, while Tier 2 strategies had empirical support for the general population but had yet to be implemented in college settings. Interventions that required further evaluation to establish effectiveness and those that had evidence of ineffectiveness were included in Tier 3 and Tier 4 respectively. Overall, only three strategies met criteria for Tier 1 designation, and two of these strategies are intensive and time-consuming individual methods. The third Tier 1 strategy, challenging alcohol expectancies, was the only method that was validated for administration in a group setting.

Alcohol expectancies refer to cognitive sets stored in memory and the nervous system about the affective and behavioral effects of alcohol. The mechanism through which expectancies influence drinking behavior has been explored through research investigating alcohol expectancies as memory processes. One theory developed from this approach characterizes expectancies as “nodes” within a symbolic network memory model (Rather, Goldman, Roehrich, & Brannick, 1992; Goldman & Rather, 1993; Rather & Goldman, 1994). This model is proximity-based such that these nodes can be closely or distantly linked based on inherent meaning and learning history causing activation to proceed predictably between nodes as stimuli salient to previously encoded material relevant to alcohol use are encountered (Goldman, 1999; Rather & Goldman, 1994). Furthermore, it is theorized that the activation pattern of these nodes influences differential drinking behavior.

A series of studies have been completed that were designed to validate a memory model-based theory of expectancy function. In general, it was found that expectancies are best understood as

information stored in memory and organized along two bipolar dimensions. The first is a bipolar positive-negative dimension consistent with factor analytic studies (Rather et al., 1992) representing expected positive and negative outcomes of drinking, while the second is an arousal-sedation dimension reflecting pharmacological effects of alcohol (Rather & Goldman, 1994, Goldman, 1999). The memory networks of heavy/high-risk drinkers and lighter drinkers have been found to vary along these expectancy dimensions. More specifically, high-risk drinkers tend to first associate positive and arousing effects with alcohol consumption and may possess tightly packed expectancy networks. Conversely, lighter drinkers first associate sedating effects and have more spatially diffuse expectancy networks. Thus, when presented with an alcohol stimulus, high-risk individuals rapidly associate positive and arousing effects to drinking, which may produce an urge to consume alcohol. Light drinkers, however, form associations at a slower rate and their specific associations with alcohol tend to be more negative and sedating and may inhibit actual alcohol consumption (Rather & Goldman, 1994).

There is a strong body of research demonstrating the influence of alcohol expectancies on drinking behavior. In addition to the above differentiation between heavy and light drinking adults (Rather & Goldman, 1994; Rather et al, 1992) studies have established that expectancies are present in children prior to experience with alcohol (Dunn & Goldman, 1996; Kraus, Smith, & Ratner, 1994), predict drinking initiation (Christiansen, Smith, Roehling, & Goldman, 1989; Stacy, 1997), differentiate light-drinking and heavy-drinking children and adults (Dunn & Goldman, 1998; Dunn & Goldman, 2000), and mediate the influence of antecedent variables on alcohol use (Darkes & Goldman, 1998; Goldman & Darkes, 1997; Sher, Walitzer, Wood, & Brent, 1991; Stacy, Newcomb & Bentler, 1991).

Expectancy research most relevant to intervention strategies has focused on changing expectancies in an effort to change alcohol use. In particular, experimental studies have been conducted to demonstrate the manipulation of expectancies by undermining positive expectancies. Referred to as an “Expectancy Challenge” (Darkes & Goldman, 1993, 1998; Dunn, Lau, & Cruz, 2000; Lau-Barraco & Dunn, 2008) this approach involves the use of a simulated-bar environment recreated in a laboratory, where heavy drinking college students are served either alcoholic or non-alcoholic (placebo) beverages in a sociable atmosphere. Participants are told to expect a certain type of beverage, but that is not necessarily what they are served. They then must try to identify who received the alcoholic beverages, including whether they themselves consumed alcohol. Participants’ inability to make these identifications at levels beyond chance, serves to challenge their expectations of the effects of alcohol (Lau-Barraco & Dunn, 2008; Goldman, 1999; Darkes & Goldman, 1993).

Darkes & Goldman (1993; 1998) conducted studies using a three-session Expectancy Challenge intervention to validate the effectiveness of this approach and to further establish the casual relationship between alcohol expectancies and consumption. Using moderate to heavy drinking male college students, they were able to demonstrate significant decreases in their positive expectancies and corresponding decreases in drinking at a 2-week follow-up for participants in the intervention group as compared to controls. Using the same Expectancy Challenge protocol, Dunn et al. (2000) were able to replicate the effectiveness of this intervention and model changes in memory processes related to changes in alcohol use. Although women were included in this sample, changes in likely activation patterns and corresponding decreases in drinking were only demonstrated in men. In an attempt to address the limitation of a multi-session format and increase generalizability, Lau-Barraco & Dunn (2008) adapted the Darkes & Goldman (1993, 1998) protocol to a single session

intervention with additional content targeted to women. This modified protocol resulted in significant decreases in expectancies and drinking across genders as compared to controls. While this was a crucial step in addressing many of the limitations of earlier expectancy challenge studies, its utility as a pragmatic intervention strategy was still restricted to a simulated bar environment and serving beverages to participants.

These studies provided substantial supporting evidence for the effectiveness of expectancy challenge interventions for heavy drinking college students, but there were serious practical barriers to dissemination. Although the concerns of a multi-session format were addressed with the introduction of the Lau-Barraco & Dunn (2008) single-session protocol, the necessity of a bar-laboratory setting made the Expectancy Challenge incompatible with broad implementation in educational institutions. For widespread utility of expectancy-based prevention strategies, effective interventions must be developed for delivery in typical settings. With this in mind, Cruz and Dunn (2003) successfully implemented a single-session, classroom-based strategy with elementary-school children. An interactive classroom exercise was designed to alter the expectancy processes of these students such that they demonstrated a higher likelihood of activation in the negative-sedation dimension following exposure to the expectancy modification alcohol prevention exercise. In a subsequent study, the modified Expectancy Challenge was then administered to a high school population and succeeded in altering expectations associated with alcohol use and in significantly decreasing alcohol consumption among males only (Cruz, 2007).

With high-risk alcohol consumption being particularly problematic for college students (Hingson et al, 2005), a pragmatic expectancy-based intervention for this population could be particularly beneficial. In an effort to develop an effective classroom delivered Expectancy Challenge protocol for college students, the Cruz (2007) protocol was modified and tested in small college

classes. Results included significant reductions in alcohol consumption and among males and females in the college population as compared to controls but did not find changes in expectancy processes (Sivasithamparam, 2008). While the small classroom Expectancy Challenge represents a cost-effective and brief strategy for reducing alcohol consumption in the college population, it failed to show changes in expectancy processes and poses some continued pragmatic concerns. The problem is that small class sizes are becoming less common at colleges and universities, particularly among introductory classes most often taken by newer students.

In the present study, the Expectancy Challenge classroom protocol will be modified to be appropriate for delivery in a single session in a typical large classroom setting of 100+ college students. The study is intended to demonstrate the effectiveness of this approach through changing alcohol expectancy processes, reducing both alcohol consumption and alcohol related harms among males and females in the college population, and it will compare the effectiveness of this expectancy modification strategy against an attention-matched wait-list control group. If successful, the single-session large classroom-based version of the Expectancy Challenge could be developed for dissemination to educational institutions as a cost-effective, brief, and validated strategy for reducing risky alcohol consumption in the college population.

METHOD

Participants

Participants included 1,053 students enrolled in undergraduate psychology courses at the University of Central Florida. As the Expectancy Challenge curriculum is a classroom exercise designed to occur as part of the regular course curriculum in a large-sized classroom, requests for participation were made to course instructors with classes of over 150 students. The final sample consisted of three general psychology courses and two upper-level psychology courses. The classes were not able to be randomized into control and experimental group as group membership had to be determined by the degree of access each instructor could accommodate. This resulted in the three general psychology courses being assigned to the Expectancy Challenge group while the two upper-level psychology courses were assigned to the attention-matched control.

Measures

Demographic Information

Participants were asked to provide demographic information including gender, age, weight, class standing, ethnicity, Greek membership, and athletic involvement.

Timeline follow-back drinking measure

A timeline follow-back procedure (Sobell & Sobell, 1992) was used to establish a typical alcohol consumption pattern for the 30-day period immediately prior to receiving the expectancy presentation, as well as for the 30-day period immediately following the presentation. The timeline follow-back procedure has well established reliability ($r=0.76-0.98$) and validity (Sobell, Sobell, Klajner, & Pavan, 1986; Sobell & Sobell, 1992; Tonigan, Miller, & Brown, 1997) and is the accepted

and preferred method of self-reported retrospective alcohol use. Participants recorded their drinking on a calendar with self-identified historical reference points to enhance recall. This method has well-established psychometric properties and allows for the collection of exact drinking data over a specified period of time as opposed to a less useful categorization of estimated drinking patterns.

Factor Model-Based Expectancy Measure

Alcohol expectancies were assessed before and after exposure to the Expectancy Challenge presentation and attention-matched control using the Comprehensive Effects of Alcohol Scale (CEOA; Fromme, et al., 1993), a factor model-based expectancy measure which possesses sufficient internal consistency and temporal stability (range of $r=0.53-0.81$ for the different factors). The CEOA was chosen over the widely used Alcohol Expectancy Questionnaire (AEQ; Brown, Goldman, Inn, & Anderson, 1980) because it is shorter in length, includes negative expectancies and measures discrete expectancies as opposed to generalized expectancies. In comparing the CEOA to the AEQ-Adolescent version, the CEOA explained more of the variance in quantity (28%) and an equal amount of variance in frequency (15%) of alcohol use (Fromme and D'Amico, 2000). The CEOA assesses both positive and negative anticipated effects of alcohol use through ratings on a 5-point value scale ranging from 1 (*bad*) to 5 (*good*). Scoring of the CEOA yields four positive subscales (Sociability, Tension Reduction, Liquid Courage, and Sexuality) and three negative subscales (Cognitive and Behavioral Impairment, Risk and Aggression, and Self-Perception). Although the AEQ has often been found to have the highest correlation with alcohol use among expectancy scales, the advantages of the CEOA for the present application were considered to be of greater importance. In addition, the CEOA has been used successfully to measure significant changes in expectancies in previous Expectancy Challenge studies (Dunn et al., 2000).

Drinking Related Harms

Drinking related harms were assessed for the 30-day period immediately prior to and immediately following the expectancy challenge presentation and attention-matched control using The Brief Young Adult Alcohol Consequences Questionnaire (BYAACQ) (Kahler, Strong, & Read, 2005; Kahler, Hustad, Barnett, Strong, & Borsari, 2008). The BYAACQ assesses 24 consequences of alcohol consumption that participants either endorse or not endorse as having occurred over the past 30. This measure has been found to possess high internal consistency, reliability, strong unidimensionality and additive properties, shows minimal item redundancy, and covers a range of problem severity in use with college students (Kahler, Strong, & Read, 2005; Kahler et al., 2008).

Procedure

Participants in the Expectancy Challenge condition completed pre-test measures and received the Expectancy Challenge presentation during their class session, and then completed follow-up measures on-line at four weeks post-presentation. The attention-matched waitlist control condition completed pre-test measures at the same time as the treatment condition, but received their regularly scheduled lecture for that course. They then completed measures for the same four week follow-up period as the treatment condition. All participants received credit for their respective courses as incentive for completion of follow-up measures. All assessment measures collected at baseline and follow-up phases were anonymous.

Since the Expectancy Challenge presentation is designed to occur as part of the regular course curriculum delivered, all students participated as it was a classroom exercise. However, only those students at least 18 years of age were permitted to complete informed consent and follow-up assessment measures.

Large Class Expectancy Challenge Protocol

Students in the Expectancy Challenge treatment condition received the modified Expectancy Challenge presentation designed to increase their attention to the sedating effects of alcohol and undermine the anticipation of other potential expectancy outcomes. The session began with the presenter introducing themselves and leading the participants through the timeline follow-back measure. The presenters then led them through an expectancy word list activity where the participants will be asked to circle all expectancies they experienced while drinking. This activity was developed for use with large classrooms as a replacement for the interactive game central to previous small group expectancy challenge protocols (Cruz, 2007; Sivasithamparam, 2008). Students were then presented with print advertisements depicting arousing and sedating expectancies. The participants were asked to identify the expectancy effects promoted in each advertisement and to recognize the contradictions. The presentation goes on to discuss the pharmacological realities of alcohol as a depressant and some common misconceptions about its effect on individuals. Students were then asked to identify some effects consistent with this fact and taught to differentiate between the ‘real’ and ‘expected’ effects of alcohol. At the end of the presentation, students were returned to the word list activity completed at the start of the session. Students were then instructed to cross off all the words they circled that were identified as ‘expected’ effects of alcohol, allowing them to process the information in a personalized manner.

RESULTS

Baseline Participant Characteristics

Baseline data collection included measures from 1053 participants, with 542 (51.5%) completing 1-month follow-up measures. Chi-square analysis showed that the follow-up completion rate was significantly different, $\chi^2=36.47$, $p<.001$, for experimental (43.7%, $n=272$) and control (62.6%, $n=270$) groups. In order to evaluate potential differences between follow-up completers and non-completers, chi-square analyses were conducted for gender, ethnicity, and class standing; separate ANOVAs were conducted for age, alcohol related harms, and drinking variables; and a MANOVA was conducted that included all sub-scales of the alcohol expectancy measure. The only significant difference found between completers and non-completers was gender, $\chi^2=27.84$, $p<.001$, with males overrepresented in the non-completer group (58.5%) and females overrepresented in the completer group (58.1%). There were no significant differences found between completers and non-completers on any of the other variables [ethnicity, $\chi^2=2.45$, $p=.65$, class standing, $\chi^2=8.74$, $p=.12$, age, $F(1, 1034) = .445$, $p=.51$, estimated mean blood alcohol concentration, $F(1, 675) = .061$, $p=.81$, estimated peak blood alcohol concentration $F(1, 1007) = .084$, $p=.77$, average drinks per sitting $F(1, 678) = 3.616$, $p=.06$, peak drinks per sitting $F(1, 1010) = .821$, $p=.37$, average drinks per weeks $F(1, 1010) = 2.586$, $p=.11$, alcohol related harms, $F(1, 1028) = .949$, $p=.33$, or alcohol expectancies $F(7, 1034) = 1.179$, $p=.312$].

Screening for outliers was performed by examining descriptive statistics computed from alcohol use measures. The range for blood alcohol concentration variables clearly exceeded the fatal level for humans (e.g., BAC in excess of .40, Berger, 2000). However, the pattern of responses of participants who reported extreme amounts of alcohol consumption did not suggest fabrication or inadequate attention and may have been due to the participants' overestimation of drinking.

Therefore, we concluded that participants were most likely to have simply overestimated their consumption, and they appeared to follow the same pattern of overestimation throughout their responses. To avoid losing these heaviest consumers from the data set, we followed a strategy used in other studies of this population in which values found to be over 3 standard deviations above the mean were incrementally recoded to one unit above the next lowest value (Tabachnick & Fidell, 2001; Borsari et al., 2007).

As the aim of the study was to compare drinking patterns of those who received the expectancy challenge curriculum to those that did not, participants who did not endorse drinking at both baseline and 1-month follow-up ($n=135$) were excluded from further analysis (consistent with similar research: Walters, Vader, & Harris, 2007; Sugarman & Carey, 2009). In order to confirm equivalence between experimental and control groups, the remaining participants ($n=407$) were compared on demographic characteristics (age, gender, class standing, ethnicity) as well as baseline dependent measures (drinking variables, alcohol-related harms, alcohol expectancies). Results revealed no significant differences between groups for gender, $\chi^2=2.74$, $p=.10$, ethnicity, $\chi^2=2.64$, $p=.62$, mean blood alcohol content, $F(1, 353)=.22$, $p=.64$, peak blood alcohol content, $F(1, 394)=.15$, $p=.70$, average drinks per sitting, $F(1, 355)=.54$, $p=.46$, peak drinks per sitting, $F(1, 396)=.03$, $p=.88$, alcohol-related harms, $F(1, 405)=1.09$, $p=.30$, or alcohol expectancies, $F(7, 397)=1.37$, $p=.22$. Analysis showed significant differences for age, $F(1, 404)=17.08$, $p<.001$, and class standing, $\chi^2=86.40$, $p<.001$, as the experimental group had a lower mean age ($M=19.38$, $SD=2.54$) than the control group ($M=20.40$, $SD=2.45$) and had a significantly greater proportion of freshman participants (74%). These differences were taken into consideration in subsequent analysis through use of age as a covariate. As class standing was significantly correlated with age, $r=.61$, $p<.001$, consideration of this difference was deemed redundant.

Participants ranged in age from 18 to 36 years with a mean age of 19.90. The sample was mostly female (70%), self-identified Caucasian (69.4%), and in freshman class standing (43%). Ethnicity of the sample was representative of the student population of the university. Demographic characteristics of comparison groups are provided in Table 1.

Alcohol Use and Associated Harms Analysis

Due to differences at baseline between the experimental and control groups, age was included as a covariate to control for any potential effect on outcomes in each analysis. To evaluate changes in alcohol use and alcohol related harms, a series of 2 (Experimental, Control) X 2 (baseline, follow-up) X 2 (male, female) analyses of covariance (ANCOVA) were conducted using a variety of drinking indices and a total score on the alcohol-related harms measure. Consistent with a-priori hypotheses, there was a significant three-way interaction between group, time and gender for average drinks per sitting, $F(1, 291) = 5.17, p = .02$. Males in the experimental group decreased their average drinks per sitting at follow-up while males in the control group increased. Females in both groups remained essentially unchanged on this variable (see Figure 1). Unfortunately, there was no significant interaction between group and time for mean blood alcohol content, $F(1, 289) = 1.15, p = .28$, peak blood alcohol content, $F(1, 383) = .34, p = .56$, or peak drinks per sitting, $F(1, 385) = .44, p = .51$. Results revealed no significant group by time interaction for alcohol related harms, $F(1, 401) = .50, p = .48$ (see Table 2 for means and standard deviations).

Alcohol Expectancy Analysis

Alcohol expectancy changes were evaluated using a 2 (Experimental, Control) X 2 (pretest, posttest) X 2 (male, female) multivariate analyses of covariance (MANCOVA) using age as a covariate. Dependent variables consisted of subscale scores computed from responses to the Comprehensive Effects of Alcohol Scale (CEOA, see Table 3 for means and standard deviations).

Consistent with a-priori hypotheses, results revealed a significant interaction between time and group for alcohol expectancies [$F(7, 382) = 8.33, p < .001$]. Subsequent ANCOVAs were conducted for each of the 7 CEOA factors. Type 1 error was controlled for using the Bonferroni procedure, such that each ANCOVA was tested for significance at the .007 level (.05 divided by the 7 ANCOVAs conducted). Significant interactions between time and group were found for six of the seven CEOA factors (see Figures 2 through 7). The experimental group showed a significant reduction across time compared to the control group on expectancies within the Sociability factor, $F(1, 388) = 42.0, p < .001$, the Liquid Courage factor, $F(1, 388) = 23.53, p < .001$, the Risk and Aggression factor, $F(1, 388) = 11.87, p = .001$, the Sexuality factor, $F(1, 388) = 10.39, p = .001$, and the Tension Reduction factor, $F(1, 388) = 11.68, p = .001$, while there was a significant increase expectancies within the Cognitive Behavioral Impairment factor, $F(1, 388) = 11.22, p = .001$. There was no significant interaction between group and time on the Self Perception factor, $F(1, 388) = .20, p = .66$.

Further Exploratory Analysis

As the program is designed to reduce heavy and risky drinking, and previous research has indicated that heavier drinking is associated with a higher rate of alcohol related problems (Presley and Pimentel, 2006), participants who endorsed greater drinking levels at baseline may be more likely to benefit from the expectancy challenge presentation. In addition, any impact the presentation may have on reducing drinking would be most evident with this population as analysis would be less restricted by floor effects. Therefore, to explore results experienced by heavier drinking participants, further analyses of drinking variables were conducted after excluding the lowest drinking male ($n=26$) and female ($n=64$) participants within the sample (bottom 25% was excluded, see Table 4 for means and standard deviations). This proportional criterion was chosen for exploratory purposes in order to allow the inclusion of a sufficient number of cases for analysis while minimizing the impact

of light drinkers on the overall group effects. Results revealed a significant interaction between group and time for both average drinks per sitting, $F(1, 220) = 5.798, p = .017$, and for peak drinks per sitting, $F(1, 257) = 5.029, p = .026$ (see Figure 8 and 9 respectively), with the experimental group decreasing their number of drinks significantly more than the control group (see Table 5 for means and standard deviations). However, results did not indicate a significant interaction between group and time on mean blood alcohol content $F(1, 220) = 1.475, p = .227$, or peak blood alcohol content, $F(1, 257) = 3.271, p = .072$.

DISCUSSION

The aims of the current study were to develop and evaluate an Expectancy Challenge curriculum suitable for delivery in a large classroom setting of 100+ college students. While previous implementations of a classroom-based Expectancy Challenge were successful in changing alcohol expectancies (Cruz, 2007) and decreasing alcohol consumption (Sivasithamparam, 2008), the interactive exercises used in these projects restricted their use to classes of 50 students or less. The present study is an attempt to use an expectancy-based intervention to change expectancy processes and alcohol consumption on a large enough scale to be pragmatic for implementation in a wide variety of types of educational institutions.

As summarized previously, expectancy theory characterizes expectancies as “nodes” within a symbolic network memory model which are linked on inherent meaning and learning history causing activation to proceed predictably between nodes when stimuli salient to previously encoded material related to alcohol use are encountered (Rather et al., 1992; Goldman & Rather, 1993; Goldman, 1999). As research supports the theory that activation patterns influence differential drinking behavior (Rather & Goldman, 1994), the current study represents an important methodological step forward in the successful alteration of alcohol expectancy processes.

The initial method with success at changing expectancy processes in high-risk drinkers involved multiple sessions with a simulated bar environment and the administration of alcohol to participants (Darkes & Goldman, 1993, 1998; Dunn, Lau, & Cruz, 2000; Lau-Barraco & Dunn, 2008). Based on this success and with aims of increased practicality as an intervention, a classroom-based presentation was developed. It involved a focus on education about the pharmacological realities of alcohol and common misconceptions about its effect on individuals, as well an exercise where participants processed the learned information through an interactive game. While this resulted

in successful expectancy changes when used with high-school aged students (Cruz, 2007), when extended to use with small classes of college aged students the expectancy changes were not evident.

The method developed and implemented in the current study consisted of a word list activity to replace the interactive game and to increase the feasibility of the classroom-based expectancy challenge as an intervention. The word list contained commonly reported effects of alcohol use and participants endorsed those effects on the list they had experienced themselves while drinking. After being presented the curriculum, participants were directed back toward their self-created list and were asked to eliminate the effects they endorsed that were due primarily to expectancy effects and not due primarily to the pharmacological effects of alcohol. This method was developed in order to allow the participants to individually consider the expectancies most relevant to them and to process the information in a highly personalized manner.

As hypothesized, the large class Expectancy Challenge method was successful in changing alcohol expectancies as compared to the control group. Both males and females who received the curriculum reported significantly altered expectancy processes as evidenced by changes on six of the seven subscales. There was a significant decrease in scores on the Sociability subscale, indicating that participants were less likely to endorse items related to alcohol's perceived prosocial effects (i.e. "I would be friendly", "I would be outgoing"). There was a significant decrease in scores on the Tension Reduction subscale as well indicating that participants were less likely to endorse items related to alcohol's perceived relaxation effects (i.e. "I would feel calm", "My body would feel relaxed"). There was also a significant decrease in scores on the Liquid Courage subscale, indicating that participants were less likely to endorse items related to alcohol's perceived empowering effects (i.e. "I would feel brave and daring", "I would feel powerful"). There was a significant decrease in scores on the Sexuality subscale, indicating that participants were less likely to endorse items related

to alcohol's perceived sexual enhancement effects (i.e. "I would be a better lover", "I would enjoy sex more"). Lastly, there was a significant decrease in scores on the Risk and Aggression subscale, indicating that participants were less likely to endorse items such as "I take risks" and "I would act tough." In contrast, an increase was seen in endorsement of expectancies on the Cognitive and Behavioral Impairment subscale which included items such as "I would feel dizzy" and "My responses would be slow." Thus participants who received the Expectancy Challenge curriculum increased their endorsement of expectancies reflective of the depressant pharmacological effects of alcohol and reduced their perception of alcohol's other potential expectancy effects. These findings indicate the curriculum is a significant advancement in manipulation of expectancies given results were achieved after such a brief intervention with a large group of participants at once. The results are particularly striking when compared to previous expectancy interventions using the same measure, which either failed to show changes (Sivasithamparam, 2008) or had changes on a smaller proportion of the measured subscales (Dunn, Lau, & Cruz, 2000).

Drinking reductions were also hypothesized in line with the strong body of research supporting the theoretical contention that changes in alcohol expectancies will be associated with changes in drinking behavior (Rather & Goldman, 1994; Rather et al, 1992; Dunn & Goldman, 1998; Dunn & Goldman, 2000). A significant reduction in average drinks per sitting for males in the expectancy challenge group as compared to the control group was observed, while females remained relatively unchanged. While a difference in effect with males and females is consistent with earlier expectancy-based interventions (i.e. Dunn et al., 2000), more recent implementations have been successful in producing an effect across genders (Lau-Barraco & Dunn, 2008; Sivasithamparam, 2008). Although this may indicate a need for increased content geared toward females, the differential effect across gender in addition to non-significant results on the other drinking indices

(typical blood alcohol content, peak blood alcohol content, and peak drinks per sitting) and alcohol related harms may be reflective of the large proportion of light drinkers within the final sample. Previous research has shown that drinkers categorized as “light drinkers” experience a low level of negative consequences related to their alcohol use and are usually considered “low-risk” (Presley and Pimentel, 2006). As the main message and aim of the expectancy challenge curriculum is not abstinence but instead reducing high-risk drinking, one would not expect to see a change in a population that is already engaging in low risk drinking patterns. While this population is still of interest, as measured expectancy changes may be protective against risky increases in alcohol consumption, this would not be evident over the short one month follow-up and thus is beyond the scope of the present study.

This large proportion of light drinkers and lack of heavier drinkers led to additional analysis on drinking indices for exploratory purposes. This analysis focused on reevaluating measured drinking changes after exclusion of the bottom 25% of drinkers (the excluded light drinkers drank an average of less than 3 times a month and drank around 2 drinks on average per sitting) present in the final sample. In this analysis, significant reductions in alcohol consumption for the Expectancy Challenge group as compared to the control were evident for average drinks per sitting as well as peak drinks per sitting. While limited in the exploratory nature of the analysis the addition of a significant effect on peak drinks per sitting that is observed, highlights the importance of having an adequate number of regular drinkers when evaluating the effectiveness of an alcohol reduction intervention. This may be particularly true for a college population where drinking behaviors fluctuate (Del Boca et al., 2004). These results are also consistent with the drinking reductions seen in the small classroom Expectancy Challenge implemented with a college population (Sivasithamparam, 2008).

It is important to note several limitations to the present study. One limitation was the poor retention of participants from baseline to one month follow-up. University constraints on advertising to general psychology courses about specific studies significantly hindered follow-up participation. More specifically, there was a policy that prevented researchers from contacting students within general psychology to notify them about the follow-up portion of the study. Consequently, those general psychology students who completed the follow-up were a self-selected sample who actively sought out the study through the universities research portal. The lack of retention was particularly limiting to the current study because it resulted in the final sample consisting of a small number of heavy, high-risk drinkers. This resulted in the study being under-powered and potentially preventing the detection of effects that may have been present.

Another limitation that is important to consider was the difficulty randomizing participating class sections into experimental and control groups, subsequently resulting in nonequivalence at baseline on age and class standing. While the differences were taken into consideration in the analysis, there is the possibility of potentially unknown and unaccounted for group differences that may have impacted the observed results. It is also important to consider the results solely within the timeframe of assessment, as no conclusions can be drawn about long-term effects of the expectancy challenge curriculum on expectancy changes, alcohol consumption or alcohol related harms. Lastly, the current study was limited in the ethnic homogeneity of the sample and as such generalization would require replication with more ethnically and culturally diverse samples. Due to these limitations caution should be used in interpreting the results of the current study.

While keeping these limitations in mind however, there are important implications of the present findings. This study represents an important extension of expectancy-based interventions for a college population. An intervention that began as a multi-session, time and resource intensive

protocol for a small group of participants has been successfully modified for use with groups of 100+ people. The current protocol can be given to this large a group in a single session curriculum that can be delivered in any standard classroom. In addition to development of a protocol that was successfully implemented with large groups, the ability to change expectancies and decrease the average number of drinks per sitting was also demonstrated. This is an important step forward toward a protocol that could be practically disseminated to educational institutions as a cost-effective, brief, and validated strategy for reducing risky alcohol consumption in the college population

The results and limitations of the current study provide numerous directions for future study. Given the lack of randomization and low retention, a more controlled study of the large group Expectancy Challenge curriculum is warranted to increase internal validity. While the protocol is designed for classroom settings, future studies may benefit from implementing the study outside of university course schedule to have adequate control over randomization, time availability, and pacing. In addition, future research should focus on longer term follow-up periods. The ability to measure the sustainability of intervention effects will be crucial in our understanding of its effectiveness and how best to use it to have a positive impact on the population. Lastly, future research should focus their efforts on the target population of high-risk drinkers. This can be accomplished one of two ways. First, participants can be actively recruited and screened for inclusion based on drinking behavior. While ideally the protocol would impact drinkers at any level, it may be difficult to detect changes when participants are not drinking heavily or regularly to begin with. The second potential way to reach high-risk drinkers is through targeted intervention with populations that are known to be high-risk, such as those involved in Greek life (Lo & Globetti, 1995; Sher, Bartholow, & Nanda, 2001).

In sum, the large group Expectancy Challenge curriculum was effective in changing alcohol expectancies and decreasing the average number of drinks per sitting. While the method in the present study was tested and developed for use with larger class sizes, it lends itself to implementation with any size group. This increased utility represents important progress in evolving expectancy-based interventions into a brief and practical program while maintaining effectiveness. While limitations warrant replication of these findings, the current study lends support to the continuation of developing intervention and prevention strategies that target alcohol expectancies as mechanisms for change.

APPENDIX A. FIGURES AND TABLES

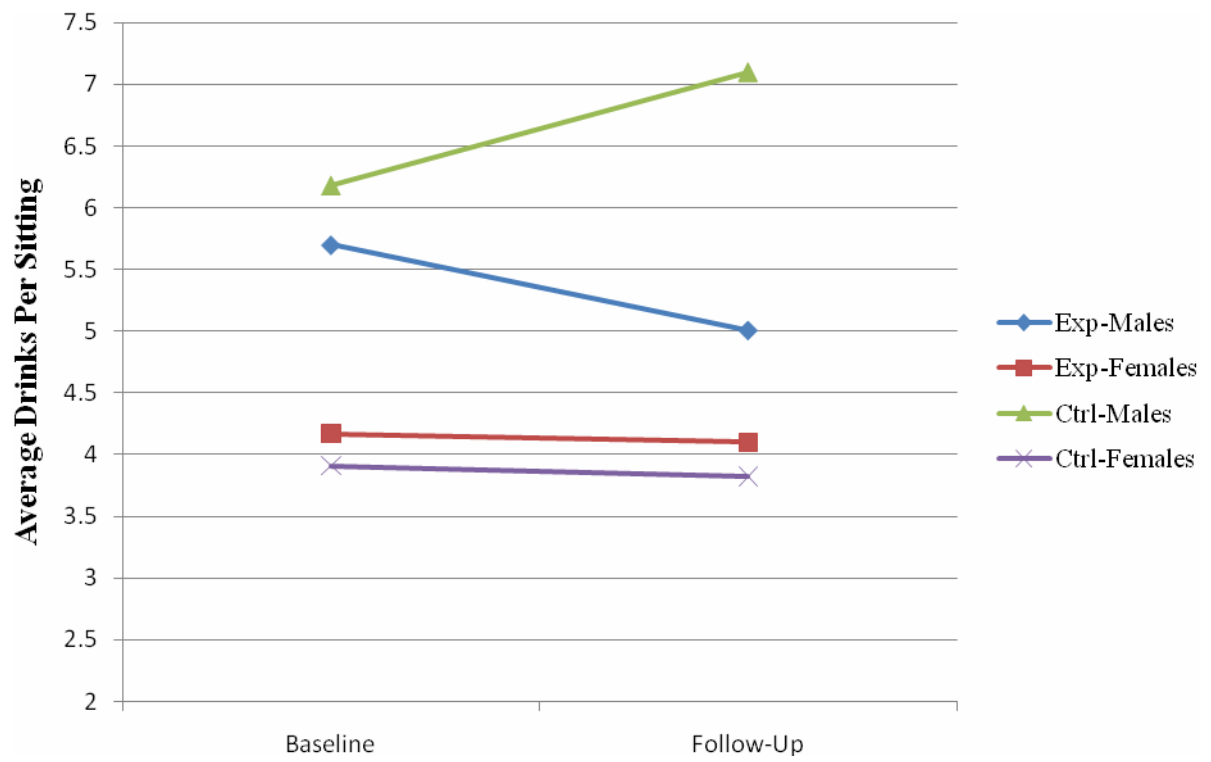


Figure 1: Average standard drinks per sitting at baseline and 1-month follow-up

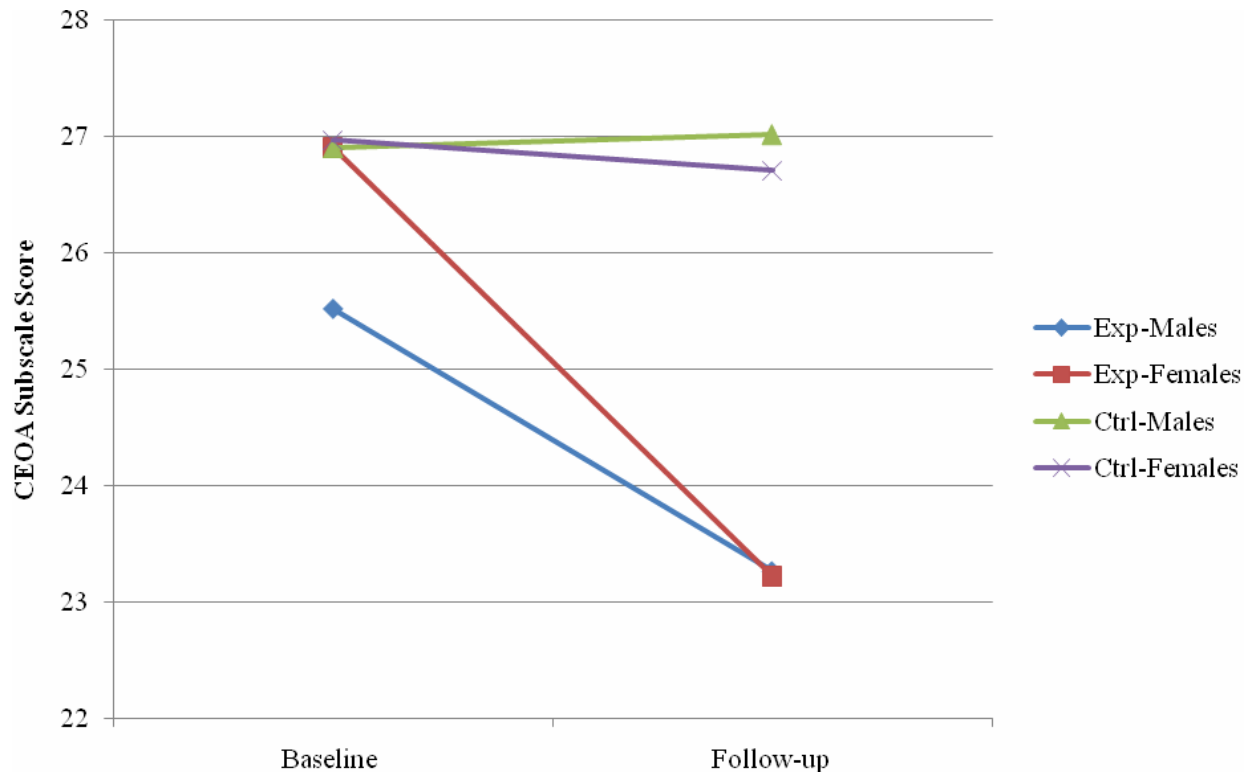


Figure 2: Sociability CEOA Subscale at baseline and 1-month follow-up

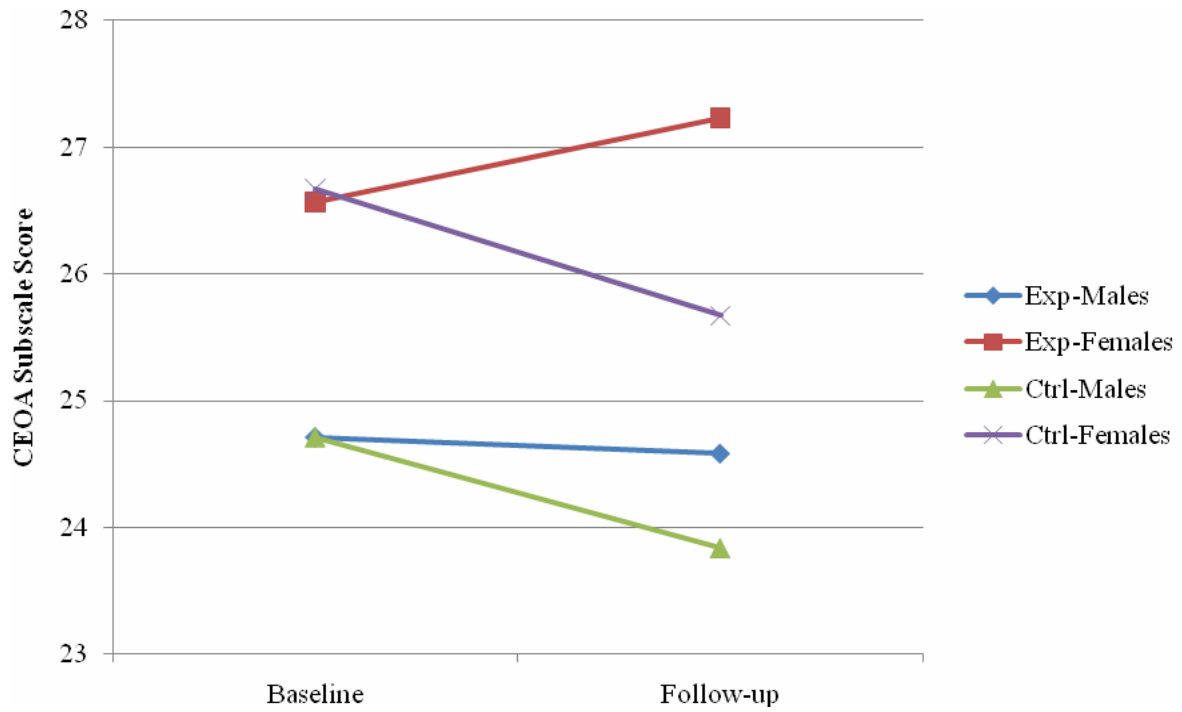


Figure 3: Cognitive Behavioral Impairment Subscale at baseline and follow-up

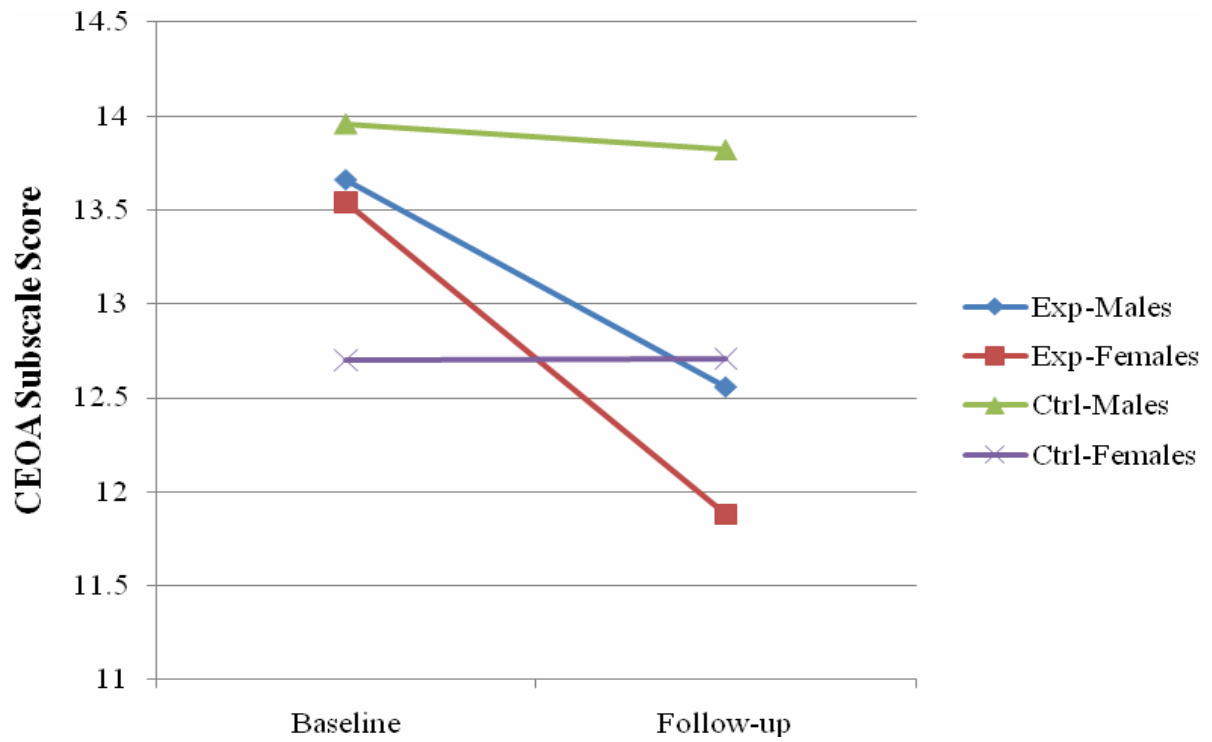


Figure 4: Liquid Courage Subscale at baseline and follow-up

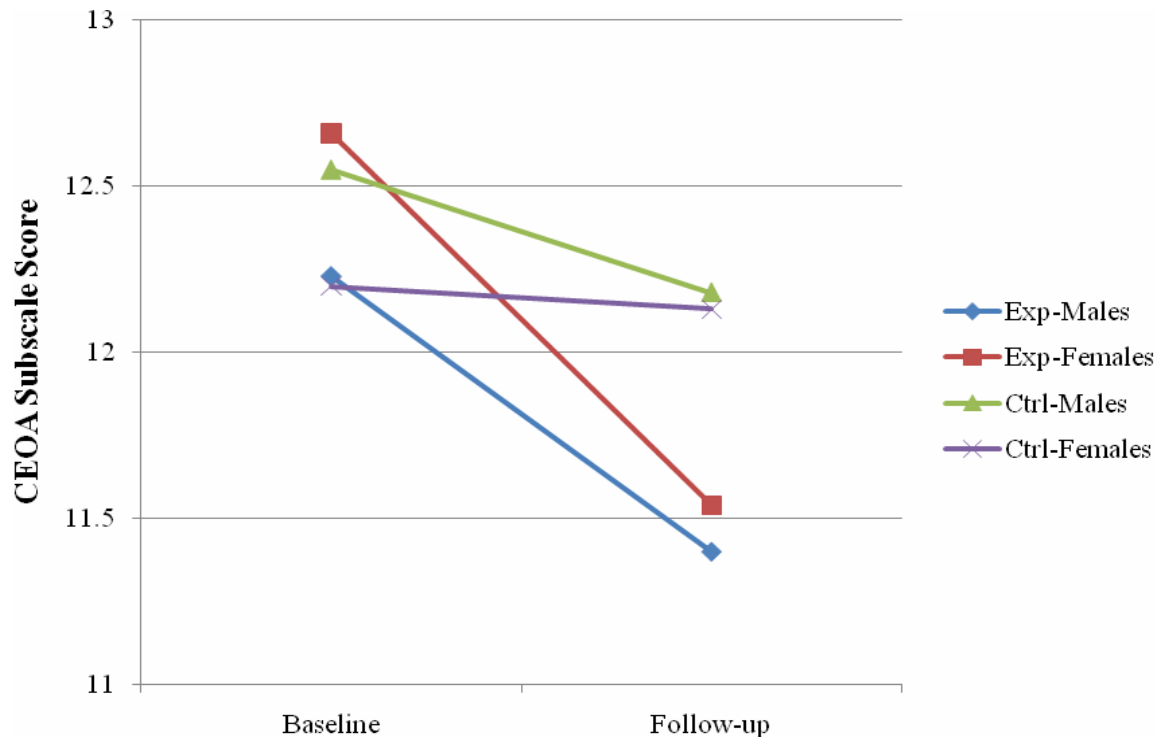


Figure 5: Risk and Aggression Subscale at baseline and 1-month follow-up

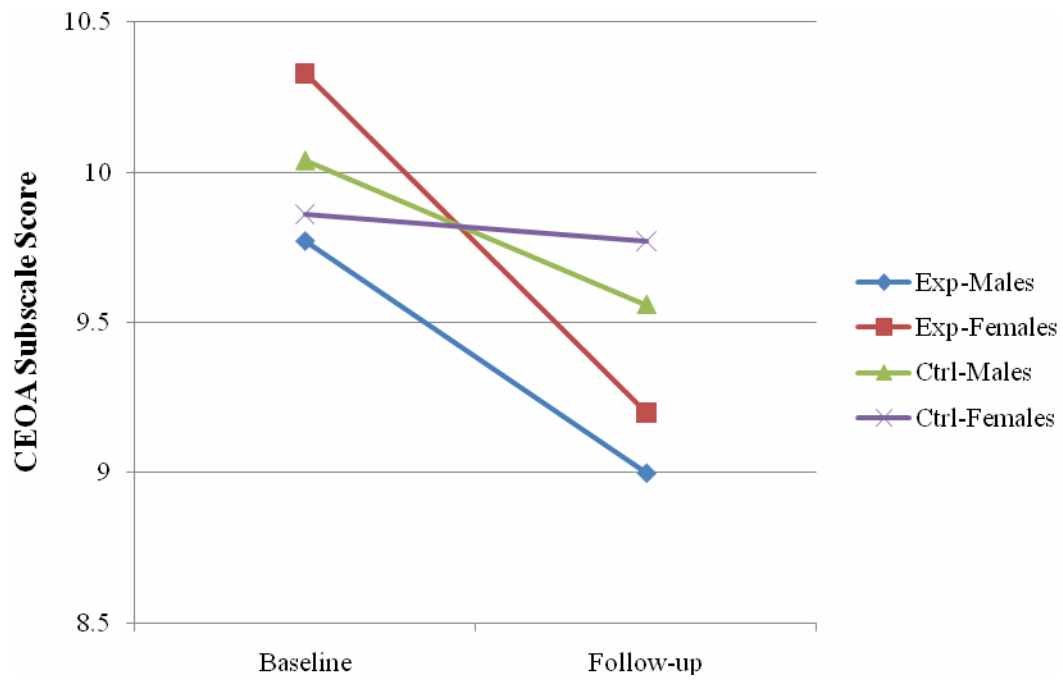


Figure 6: Sexuality Subscale at baseline and 1-month follow-up

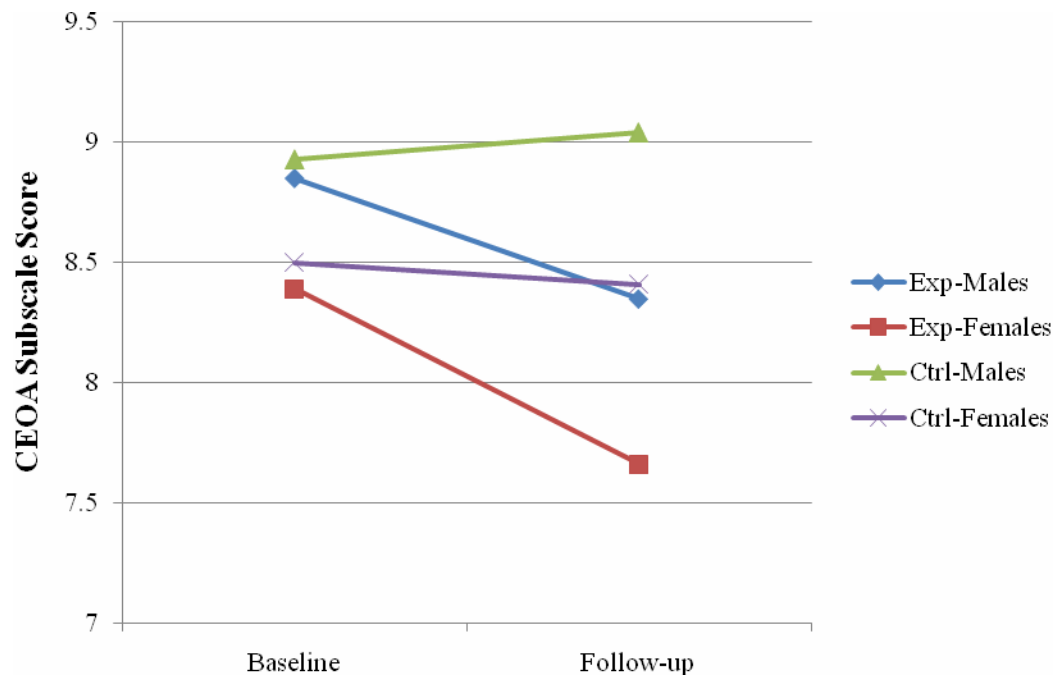


Figure 7: Tension Reduction Subscale at baseline and 1-month follow-up

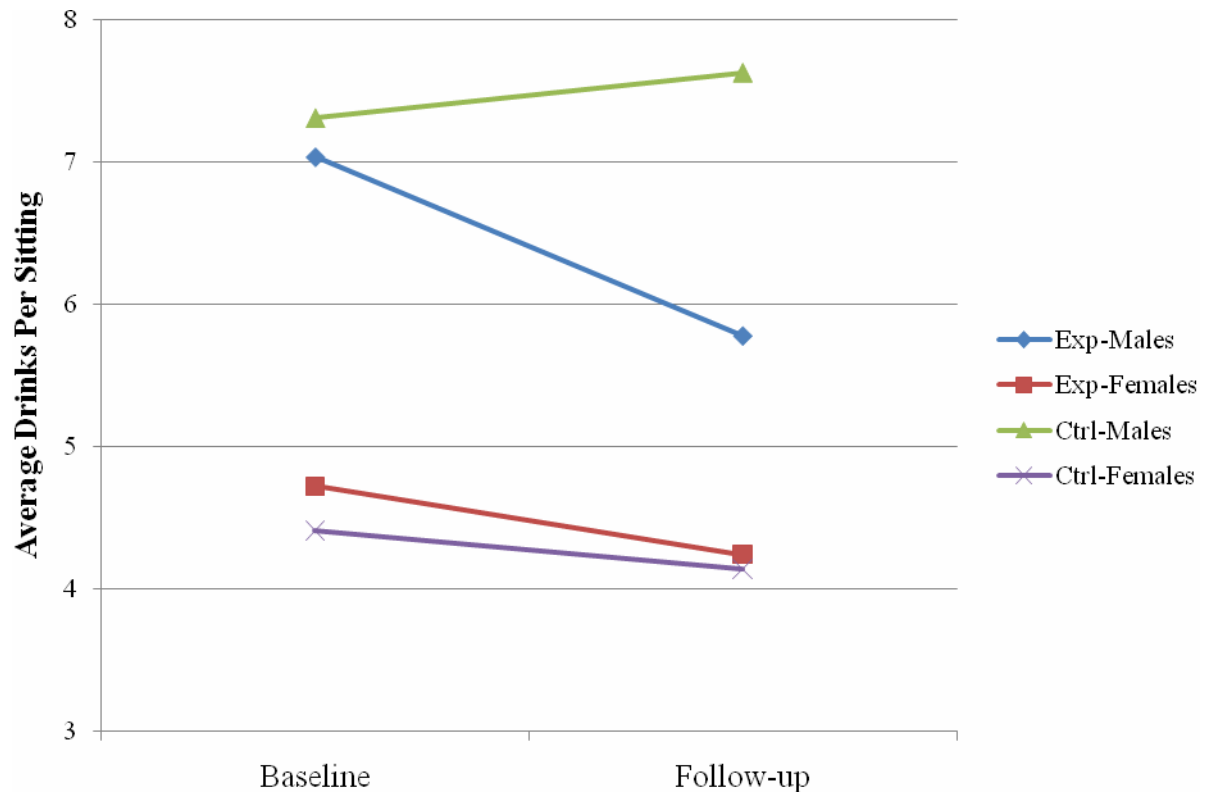


Figure 8: Average drinks per sitting at baseline and follow-up: bottom 25% of drinkers excluded

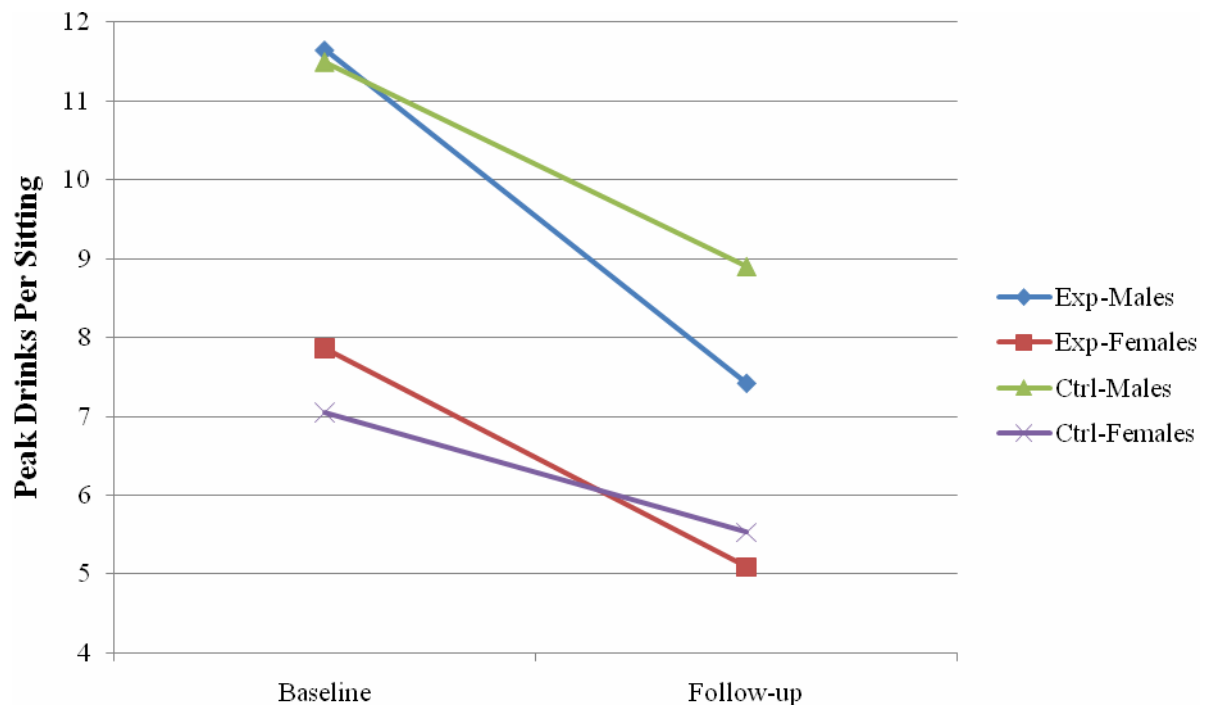


Figure 9: Peak drinks per sitting at baseline and follow-up: bottom 25% of drinkers excluded

Table 1. Group comparisons for Experimental (n=198) and Control (n=209)

	Experimental	Control		
	<i>M (SD)</i>	<i>M (SD)</i>	χ^2/F	<i>p</i>
Male gender	67(33.8%)	55 (26.3%)	2.74	.10
Female gender	131 (66.2%)	154 (73.7%)		
Class Standing				
Freshman	128 (65.3%)	45 (21.8%)	86.40	<.001
Sophomore	34 (17.3%)	45 (21.8%)		
Junior	25 (12.8%)	79 (38.3%)		
Senior	9 (4.6%)	36 (17.5%)		
Post-Bac	0 (0.0%)	1 (0.5%)		
Age	19.38 (2.54)	20.40 (2.45)	17.08	<.001
Ethnicity				
Caucasian	140 (71.4%)	139 (67.5%)	2.64	.62
Hispanic	23 (11.7%)	33 (16.0%)		
African American	12 (6.1%)	16 (7.8%)		
Asian-American	10 (5.1%)	7 (3.4%)		
Other	11 (5.6%)	11 (5.3%)		

Table 2. Alcohol Use and Associated Harms Across Experimental and Control

	Females		Males		<i>F</i>	<i>p</i>
	<i>M (SD)</i>		<i>M (SD)</i>			
	Baseline	1-mth	Baseline	1-mth		
Mean BAC					1.15	.28
EC	.08(.06)	.07(.06)	.08(.06)	.06(.06)		
Control	.08 (.06)	.07(.06)	.09(.07)	.09(.08)		
Peak BAC					.34	.56
EC	.14(.12)	.10(.10)	.11(.13)	.08(.09)		
Control	.13(.12)	.10(.10)	.15(.13)	.12(.12)		
Average Drinks per Sitting					5.17 ^ψ	.02 ^{ψ*}
EC	4.17(2.25)	4.10(2.36)	5.70(3.60)	5.01(3.29)		
Control	3.91(2.03)	3.82(1.89)	6.18(3.30)	7.10(4.24)		
Peak Drinks per Sitting					.44	.51
EC	5.95(4.45)	4.61(3.76)	7.28(7.35)	6.11(5.43)		
Control	5.47(3.94)	4.77(3.62)	9.24(6.40)	8.13(6.58)		
Harms					.50	.48
EC	5.36(4.97)	7.08(7.38)	5.11(5.17)	6.26(6.10)		
Control	5.11(5.17)	6.26(6.10)	5.85(5.83)	6.45(6.41)		

^ψValues for Group x Time x Gender interaction

*Significant at alpha level .05

Table 3. Alcohol Expectancy Changes Across Experimental and Control

	Females		Males		<i>F</i>	<i>p</i>
	<i>M (SD)</i>		<i>M (SD)</i>			
	Baseline	Post-Test	Baseline	Post-Test		
Sociability					42.00	<.001*
EC	26.91(4.71)	23.22(7.80)	25.52(4.64)	23.27(6.26)		
Control	26.97(4.38)	26.71(4.59)	26.91(4.20)	27.02(4.63)		
Cognitive/Behavioral Impairment					11.22	.001*
EC	26.57(4.94)	27.23(5.21)	24.71(5.46)	24.58(6.18)		
Control	26.67(4.81)	25.67(5.21)	24.71(6.06)	23.84(6.98)		
Liquid Courage					23.53	<.001*
EC	13.54(3.60)	11.88(4.45)	13.66(3.29)	12.56(3.83)		
Control	12.70(3.28)	12.71(3.83)	13.96(3.85)	13.82(4.15)		
Risk & Aggression					11.87	.001*
EC	12.66(3.32)	11.54(3.96)	12.23(3.39)	11.40(4.34)		
Control	12.20(3.36)	12.13(3.77)	12.55(3.73)	12.18(4.15)		
Sexuality					10.39	.001*
EC	10.33(3.16)	9.20(3.67)	9.77(3.08)	9.00(3.22)		
Control	9.86(2.87)	9.77(2.97)	10.04(3.43)	9.56(3.74)		
Self Perception					.20	.66
EC	7.87(2.55)	8.14(3.07)	7.53(2.51)	7.39(2.23)		
Control	7.88(2.68)	8.01(2.98)	7.38(2.68)	7.27(2.95)		
Tension Reduction					11.68	.001*
EC	8.39(1.96)	7.66(2.53)	8.85(1.98)	8.35(2.33)		
Control	8.50(1.97)	8.41(2.31)	8.93(2.15)	9.04(2.33)		

*Significant at alpha level .007

Table 4. Mean and Standard Deviations of Baseline Alcohol Use for Bottom 25% of Drinkers

	Females	Males	Total
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Mean BAC	.01(.01)	.01(.01)	.01(.01)
Peak BAC	.02(.03)	.03(.03)	.02(.03)
Average Drinks per Sitting	2.16(1.67)	2.13(1.05)	2.16(1.51)
Peak Drinks per Sitting	2.90(2.43)	2.92(1.92)	2.91(2.28)

Table 5. Alcohol Use Across Experimental and Control after Bottom 25% Exclusion

	Females		Males		<i>F</i>	<i>p</i>
	<i>M (SD)</i>		<i>M (SD)</i>			
	Baseline	1-mth	Baseline	1-mth		
Mean BAC					1.48	.23
EC	.10(.06)	.08(.06)	.11(.07)	.08(.07)		
Control	.10(.06)	.08(.06)	.11(.06)	.09(.08)		
Peak BAC					3.27	.07
EC	.20(.11)	.12(.10)	.19(.12)	.11(.11)		
Control	.18(.11)	.13(.10)	.19(.11)	.13(.12)		
Average Drinks per Sitting					5.80	.02*
EC	4.72(2.02)	4.24(2.19)	7.04(3.27)	5.78(3.51)		
Control	4.41(1.90)	4.14(1.86)	7.31(2.88)	7.63(4.24)		
Peak Drinks per Sitting					5.03	.03*
EC	7.86(3.91)	5.09(3.80)	11.65(6.73)	7.42(6.56)		
Control	7.05(3.50)	5.53(3.65)	11.50(5.80)	8.90(6.45)		

*Significant at alpha level .05

APPENDIX B. INFORMED CONSENT

Dear Research Participant,

You have been invited to participate in a research study conducted by a faculty member in the UCF Psychology Department and the Office of Alcohol and Other Drug Prevention Programming at UCF.

Your participation will involve anonymously completing survey measures before and after receiving a presentation on media literacy and a summary of related research findings focused on the effects of alcohol. Questions will ask about alcohol use and related attitudes and behaviors. You can participate in completing these questions no matter what your own alcohol use history may be (never drinker, non-drinker, regular drinker, etc.). Your identity and all of your responses will be kept **anonymous**. Information gathered will only be used anonymously to improve the education students like you receive. ***Your honesty is essential to the study, which is why we guarantee complete anonymity.***

You can withdraw from the study at any time without penalty. Only those individuals who are at least 18 years of age will be included in this study. If you provide consent to participate, you will be asked to complete a survey today, then again following the presentation via brief online surveys.

Although there are no foreseeable risks from your participation in this investigation, should you have an emotional reaction to any of the material presented, please notify the leader in your session or any of the primary investigators listed below:

Project Coordinator:

Amy Schreiner
Dept. of Psychology
aschrein@mail.ucf.edu
(407) 823-2522

Principal Investigator:

Michael Dunn, Ph.D.
Dept. of Psychology
mdunn@mail.ucf.edu
(407) 823-3083

Co-Investigator:

Tom Hall, MSW, LCSW
SDES
tvhall@mail.ucf.edu
(407) 823-0869

In addition, the University requires that we inform every research participant of the following:

You acknowledge that the University of Central Florida is an agency of the State of Florida and that the University of Central Florida's operations and liabilities are regulated by Florida law, including the University of Central Florida's ability to indemnify any person, firm or corporation for injury or loss caused by the University of Central Florida; that the State of Florida is self-insured to the extent of its liability under law; and that liability in excess of that specified in statute may be awarded only through special legislative action. Accordingly, the University of Central Florida's ability to compensate you for any injury suffered during this research study is very limited.

Information regarding your rights as a research volunteer may be obtained from:

Barbara Ward, CIM
University of Central Florida (UCF)
Office of Research & Commercialization

12201 Research Parkway, Suite 501
Orlando, FL 32826-3246
Telephone: 407-823-2901

If you have no objections to participating in this study, **please print and sign your name below**. Please include your email address and phone number if you wish to be contacted to complete the online follow-up surveys and receive your compensation. If you feel you need additional information, please contact Amy Schreiner at 407-823-2522.

- ☐ I want to participate in this study.
- ☐ I do not want to participate in this study.

Your Name (Please print clearly)

Your Signature (Please Sign)

APPENDIX C. TIMELINE FOLLOWBACK DRINKING MEASURE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<i>August 20</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>21</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>22</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>23</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>24</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>25</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>26</i> Drinking Occasion: # Drinks: ____ Over ____ hours
<i>27</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>28</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>29</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>30</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>31</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>September 1</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>2</i> Drinking Occasion: # Drinks: ____ Over ____ hours
<i>3</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>4</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>5</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>6</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>7</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>8</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>9</i> Drinking Occasion: # Drinks: ____ Over ____ hours
<i>10</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>11</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>12</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>13</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>14</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>15</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>16</i> Drinking Occasion: # Drinks: ____ Over ____ hours
<i>17</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>18</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>19</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>20</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>21</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>22</i> Drinking Occasion: # Drinks: ____ Over ____ hours	<i>23</i> Drinking Occasion: # Drinks: ____ Over ____ hours

APPENDIX D. COMPREHENSIVE EFFECTS OF ALCOHOL MEASURE

The following section assesses what you would expect to happen if you were under the influence of alcohol.

If you do not drink alcohol, please answer questions based on your beliefs, knowledge, and understanding of the effects of alcohol.

Circle one option from disagree to agree – depending on whether you expect the effect to happen to you if you were under the influence of alcohol. These effects will vary, depending upon the amount of alcohol you typically consume.

This is not a personality assessment. We want to know what you expect to happen if you were to drink alcohol, not how you are when you are sober. Example: If you are always emotional, you would not circle agree as your answer unless you expected to become MORE EMOTIONAL if you drank.

If I were under the influence of alcohol:

1. I would be outgoing.....	Disagree	Slightly Disagree	Slightly Agree	Agree
2. My senses would be dulled.....	Disagree	Slightly Disagree	Slightly Agree	Agree
3. I would be humorous.....	Disagree	Slightly Disagree	Slightly Agree	Agree
4. My problems would seem worse.....	Disagree	Slightly Disagree	Slightly Agree	Agree
5. It would be easier to express my feelings.....	Disagree	Slightly Disagree	Slightly Agree	Agree
6. My writing would be impaired.....	Disagree	Slightly Disagree	Slightly Agree	Agree
7. I would feel sexy.....	Disagree	Slightly Disagree	Slightly Agree	Agree
8. I would have difficulty thinking.....	Disagree	Slightly Disagree	Slightly Agree	Agree
9. I would neglect my obligations.....	Disagree	Slightly Disagree	Slightly Agree	Agree
10. I would be dominant.....	Disagree	Slightly Disagree	Slightly Agree	Agree
11. My head would feel fuzzy.....	Disagree	Slightly Disagree	Slightly Agree	Agree
12. I would enjoy sex more.....	Disagree	Slightly Disagree	Slightly Agree	Agree

If I were under the influence of alcohol:

13. I would feel dizzy.....	Disagree	Slightly Disagree	Slightly Agree	Agree
14. I would be friendly.....	Disagree	Slightly Disagree	Slightly Agree	Agree
15. I would be clumsy.....	Disagree	Slightly Disagree	Slightly Agree	Agree
16. It would be easier to act out my fantasies.....	Disagree	Slightly Disagree	Slightly Agree	Agree
17. I would be loud, boisterous, or noisy.....	Disagree	Slightly Disagree	Slightly Agree	Agree
18. I would feel peaceful.....	Disagree	Slightly Disagree	Slightly Agree	Agree
19. I would be brave and daring.....	Disagree	Slightly Disagree	Slightly Agree	Agree
20. I would feel unafraid.....	Disagree	Slightly Disagree	Slightly Agree	Agree

21. I would feel creative.....	Disagree	Slightly Disagree	Slightly Agree	Agree
22. I would be courageous.....	Disagree	Slightly Disagree	Slightly Agree	Agree
23. I would feel shaky or jittery the next day.....	Disagree	Slightly Disagree	Slightly Agree	Agree
24. I would feel energetic.....	Disagree	Slightly Disagree	Slightly Agree	Agree
25. I would act aggressively.....	Disagree	Slightly Disagree	Slightly Agree	Agree
26. My responses would be slow.....	Disagree	Slightly Disagree	Slightly Agree	Agree
27. My body will be relaxed.....	Disagree	Slightly Disagree	Slightly Agree	Agree
28. I would feel guilty.....	Disagree	Slightly Disagree	Slightly Agree	Agree
29. I would feel calm.....	Disagree	Slightly Disagree	Slightly Agree	Agree
30. I would feel moody.....	Disagree	Slightly Disagree	Slightly Agree	Agree
31. It would be easier to talk to people.....	Disagree	Slightly Disagree	Slightly Agree	Agree
32. I would be a better lover.....	Disagree	Slightly Disagree	Slightly Agree	Agree
33. I would feel self-critical.....	Disagree	Slightly Disagree	Slightly Agree	Agree
34. I would be talkative.....	Disagree	Slightly Disagree	Slightly Agree	Agree
35. I would act tough.....	Disagree	Slightly Disagree	Slightly Agree	Agree
36. I would take risks.....	Disagree	Slightly Disagree	Slightly Agree	Agree
37. I would feel powerful.....	Disagree	Slightly Disagree	Slightly Agree	Agree
38. I would act sociable.....	Disagree	Slightly Disagree	Slightly Agree	Agree

APPENDIX E. DEMOGRAPHICS MEASURE

Age: _____ years old

(Circle only **ONE** answer for each question below, except where noted otherwise)

Sex: Male Female

Current Weight: _____ lbs

What is your CURRENT educational status?

Freshman	Sophomore	Junior
Senior	Post-Baccalaureate	Non-Degree Seeking

Have you completed AlcohoLEDU?

Yes No

Which answer BEST describes your ethnicity?

Caucasian/White African-American/Black Hispanic Asian-American Other

Which answer BEST describes your living situation?

Residence hall University-affiliated off-campus Fraternity/sorority

Independent house/apartment

With whom do you live? (circle all that apply)

Roommate(s) Alone Parent(s) Significant other Other (specify: _____)

Are you CURRENTLY in, or do you PLAN TO RUSH, a fraternity/sorority?

Yes No

Are you CURRENTLY on an NCAA athletic team at the University of Central Florida?

Yes No

Are you CURRENTLY participating in any club sports or rec leagues at UCF?

Yes No

How many hours do you typically work at a job PER WEEK? _____ hours

What is your FATHER'S highest level of education? (Circle ONE)

Less than High School	Associate's Degree (A.A. or A.S.)
Some High School	Bachelor's Degree
High School Diploma/GED	Master's Degree
Some College	Doctoral Level Degree (Ph.D, M.D., J.D.)

What is your MOTHER'S highest level of education? (Circle ONE)

Less than High School	Associate's Degree (A.A. or A.S.)
Some High School	Bachelor's Degree
High School Diploma/GED	Master's Degree
Some College	Doctoral Level Degree (Ph.D, M.D., J.D.)

APPENDIX F. ALCOHOL-RELATED HARMS MEASURE

Different things happen to people while they are drinking alcohol or as a result of their alcohol use. Some of these things are listed below. **Please indicate whether each has happened to you during the last 30 days while you were drinking alcohol or as the result of your alcohol use.**

Has this happened to you over the last 30 days?	(circle one)	
While drinking, I have said or done embarrassing things	Yes	No
I have had a hangover (headache, sick stomach) the morning after I had been drinking	Yes	No
I have often found it difficult to limit how much I drink	Yes	No
I have spent too much time drinking	Yes	No
I have felt very sick to my stomach or thrown up after drinking	Yes	No
I have not gone to work because of drinking, a hangover, or illness caused by drinking	Yes	No
I have missed classes at school because of drinking, a hangover, or illness caused by drinking	Yes	No
I have taken foolish risks when I have been drinking	Yes	No
I have been overweight because of my drinking	Yes	No
I have felt badly about myself because of my drinking	Yes	No
I have driven a car when I knew I had too much to drink to drive safely	Yes	No
I often have ended up drinking on nights when I had planned not to drink	Yes	No
I have passed out from drinking	Yes	No
My physical appearance has been harmed by my drinking	Yes	No

I have woken up in an unexpected place after heavy drinking	Yes	No
Has this happened to you over the last 30 days?	(circle one)	
I have found that I needed larger amounts of alcohol to feel any effect, or that I could no longer get high or drunk on the amount that used to get me high or drunk	Yes	No
When drinking, I have done impulsive things I regretted later	Yes	No
My drinking has created problems between myself and my boyfriend/girlfriend/spouse, parents, or other near relatives	Yes	No
I've not been able to remember large stretches of time while drinking heavily	Yes	No
My drinking has gotten me into sexual situations I later regretted	Yes	No
I have become very rude, obnoxious, or insulting after drinking	Yes	No
I have performed poorly on a test or important project because of my drinking	Yes	No
I have had memory loss because of my drinking	Yes	No
I have had less energy or felt tired because of my drinking	Yes	No
I have felt like I needed a drink after I'd gotten up (that is, before breakfast)	Yes	No
The quality of my school work has suffered because of my drinking	Yes	No
I have neglected my obligations to family, or work because of drinking	Yes	No
I have neglected my obligations to school because of drinking	Yes	No
I have thought I might have a drinking problem	Yes	No

APPENDIX G. IRB APPROVAL LETTERS



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

EXPEDITED CONTINUING REVIEW APPROVAL NOTICE

From : UCF Institutional Review Board
FWA00000351, Exp. 10/8/11, IRB00001138

To : Michael E. Dunn, Ph.D. and Co-PIs if applicable: Thomas V. Hall, MSW

Date : June 02, 2009

IRB Number: SBE-07-05046

Study Title: **Implementation of an Alcohol Expectancy Curriculum Designed to Reduce Alcohol Use and Improve Academic Performance among First-Year University Students**

Dear Researcher,

This letter serves to notify you that the continuing review application for the above study was reviewed and approved by the IRB designated reviewer on 6/2/2009 through the expedited review process according to 45 CFR 46 (and/or 21 CFR 50/56 if FDA-regulated).

Continuation of this study has been approved for a one-year period. The expiration date is 6/1/2010. This study was determined to be no more than minimal risk and the category for which this study qualified for expedited review is:

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Subjects or their representatives must receive a copy of the consent form(s).

All data must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Use the Unanticipated Problem Report Form or the Serious Adverse Event Form (within 5 working days of event or knowledge of event) to report problems or events to the IRB. Do not make changes to the study (i.e., protocol methodology, consent form, personnel, site, etc.) before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form cannot be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 06/02/2009 02:18:34 PM EDT

IRB Coordinator



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

EXPEDITED CONTINUING REVIEW APPROVAL NOTICE

From : UCF Institutional Review Board
FWA00000351, Exp. 5/07/10, IRB00001138

To : Michael E. Dunn and Thomas V. Hall

Date : June 18, 2008

IRB Number: SBE-07-05046

Study Title: Implementation of an Alcohol Expectancy Curriculum Designed to Reduce Alcohol Use and Improve Academic Performance Among First-Year University Students

Dear Researcher,

This letter serves to notify you that the continuing review application for the above study was reviewed and approved by the IRB Chair on 06/18/2008 through the expedited review process according to 45 CFR 46 (and/or 21 CFR 50/56 if FDA-regulated).

Continuation of this study has been approved for a one-year period. The expiration date is 06/17/2009. This study was determined to be no more than minimal risk and the category for which this study qualified for expedited review is:

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Subjects or their representatives must receive a copy of the consent form(s).

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To continue this research beyond the expiration date, a Continuing Review Form must be submitted 2 – 4 weeks prior to the expiration date. Use the Unanticipated Problem Report Form or the Serious Adverse Event Form (within 5 working days of event or knowledge of event) to report problems or events to the IRB. Do not make changes to the study (i.e., protocol methodology, consent form, personnel, site, etc.) before obtaining IRB approval. Changes can be submitted for IRB review using the Addendum/Modification Request Form. An Addendum/Modification Request Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Janice Turchin on 06/18/2008 02:30:53 PM EDT

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